

**OUTCOME OF INSTRUMENTAL VAGINAL DELIVERIES IN REFERRED CASES**R. C. Prameela<sup>1</sup>, Asha M. B<sup>2</sup>, S. Prajwal<sup>3</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: INTRODUCTION:** Instrumental vaginal deliveries are important procedures. Performed in indicated cases and attending to the well laid criterias will reduce the fetal and maternal morbidity. These assisted instrumental vaginal deliveries help in reducing the caesarean section rate. **AIMS AND OBJECTIVES:** To determine the incidence and indications of instrumental vaginal deliveries. To know the maternal and fetal outcome in ventouse (vaccum assisted vaginal delivery) and forceps deliveries. **MATERIAL AND METHOD:** This was a retrospective study carried between 01/06/2014 to 31/08/2014 at Cheluvamba Hospital, Mysore Medical College and Research Institute. The hospital records of all the referred patients who had ventouse (vaccum assisted vaginal delivery) and forceps deliveries were obtained and data on age, parity, referral and type of procedure performed, APGAR score and complications were entered into a proforma and analyzed. **RESULT:** During the period under review there were total of 3385 deliveries, LSCS 843 cases(24.9%), Total instrumental vaginal deliveries 110 cases(3.2%). 33 Ventouse (vaccum assisted vaginal delivery) deliveries(0.9%), 57 Low forceps deliveries(1.68%) and 20 Outlet forceps deliveries(0.59%). Most common indication for instrumental deliveries being fetal distress(62 cases), Prolonged second stage of labour and maternal exhaustion (36 cases). Cut short 2<sup>nd</sup> stage of labour- previous LSCS(8cases) and Eclampsia(2cases), RHD(1case), Sickle cell anemia with avascular necrosis femur neck(1case). Number of alive babies(103 babies), Perinatal mortality 7cases(0.20%), 8 babies required NICU admission for 3-4 days, 1 baby had subdural hematoma, 2 babies had forceps mark. Complications like vaginal tear (4 cases), episiotomy extension (18 cases). **CONCLUSION:** Ventouse and forceps remains appropriate tool in the armamentarium of the modern obstetrician. The major factor which determines the safety of the instrument is the operator rather than the instrument. Extreme caution, proper expertise and judicial use of these instruments are required to prevent undue risk of mother and fetus. Encouraging operative vaginal deliveries may help to reduce unwanted and raised caesarean section rates.

**KEYWORDS:** Assisted vaginal delivery, Forceps, Ventouse.

**INTRODUCTION:** Instrumental vaginal deliveries are an important procedure which can be used to improve outcome of vaginal delivery and this reduces the caesarean section rate. Assisted vaginal delivery, with the use of forceps and ventouse(vaccum assisted vaginal delivery) or vacuum extraction(VE), offers the option to accomplish safe delivery for the mother and the clinician. Modern obstetrics practice has witnessed an increase in the caesarean section rates everywhere. WHO recommends 10–15% caesarean section rate to achieve optimal maternal and perinatal safety. A successful assisted vaginal delivery avoids caesarean section, its attendant uterine scar and its implications for future pregnancy.<sup>1</sup> The incidence varies between 10-12%<sup>1</sup> in UK, in US 3.6%.<sup>2,3</sup>

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### AIM AND OBJECTIVES:

- To determine the incidence and indications of instrumental vaginal deliveries at tertiary hospital at Cheluvamba hospital, Mysuru.
- To know the maternal and fetal outcome in ventouse and forceps deliveries.

### MATERIAL AND METHOD:

- This was a retrospective study carried between 01/06/2014 to 31/08/2014 at Cheluvamba Hospital, Mysore Medical College and Research Institute. The hospital records of all the referred patients who had ventouse and forceps deliveries were obtained and data on age, parity, referral and type of procedure performed, APGAR score and complications were entered into a proforma and analysed
- Silastic cup was used in ventouse( vacuum extraction).
- Forceps deliveries were performed using Simpson's low forceps and short curved outlet Wrigley's forceps and.
- The various indications for instrumental delivery were fetal distress, non-progressive second stage of labor, to cut short second stage of labor, poor maternal efforts.
- Criteria for application of low forceps was, leading point of fetal skull at station >+2, and not on pelvic floor. Rotation <45 degree (left or right occiput anterior or occiput posterior). Rotation >45 degree.
- Criteria for application of outlet forceps were scalp visible at the introitus without separating labia, fetal skull has reached pelvic floor. Sagittal suture in anteroposterior diameter or right or left occiput anterior or posterior position.
- Fetal head at or on perineum. Rotation does not exceed 45 degree.
- Maternal morbidity was analyzed in terms of perineal, vaginal, cervical, lacerations, episiotomy extension, urinary incontinence, traumatic postpartum hemorrhage. Neonatal complications in both groups including low Apgar score, scalp and facial injuries, cephalhematoma, birth asphyxia, neonatal sepsis, were noted.

**RESULTS:** Total numbers of deliveries under study period was 3385. Of these 2432 ladies delivered vaginally. 843 emergency LSCS was done. 110 cases required instrumental vaginal delivery.

AGE	VENTOUSE	OUTLET FORCEPS	LOW FORCEPS	TOTAL
<20years	17	5	23	45(40.9%)
21 to 30 years	15	13	32	60(54.5%)
>31years	1	2	2	5(4.5%)
<b>Total</b>	<b>33</b>	<b>20</b>	<b>57</b>	<b>110</b>

Table 1: Age-wise distribution

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PARITY	VENTOUSE	OUTLET FORCEPS	LOW FORCEPS	TOTAL
PRIMEGRAVIDA	25	14	47	86(78.2%)
MULTIGRAVIDA	8	6	10	24(21.8%)
<b>TOTAL</b>	<b>33</b>	<b>20</b>	<b>57</b>	<b>110</b>

Table 2: Parity-wise distribution

GESTATIONAL AGE	VENTOUSE	OUTLET FORCEPS	LOW FORCEPS
<37 Weeks	2	0	1
37-40 Weeks	19	8	33
>40 Weeks	12	12	23
<b>Total</b>	<b>33</b>	<b>20</b>	<b>57</b>

Table 3: Gestational weeks

BIRTH WEIGHT	VENTOUSE	OUTLET FORCEPS	LOW FORCEPS	total
<2.5kg	4	0	5	9
2.5-3.5kg	28	18	48	94
>3.5kg	1	2	4	7
<b>Total</b>	<b>33</b>	<b>20</b>	<b>57</b>	<b>110</b>

Table 4: Birth-weight

INDICATION	VENTOUSE	OUTLET FORCEPS	LOW FORCEPS	TOTAL
PROLONGED SECOND STAGE WITH FAILED MATERNAL FORCES	5	11	20	36(32.7%)
FETAL DISTRESS	19	6	36	61(55.5%)
CUT SHORT SECOND STAGE OF LABOUR	9	3	1	13(11.8%)
	<b>33</b>	<b>20</b>	<b>57</b>	<b>110</b>

Table 5: Indications

NEONATAL OUTCOME	VENTOUSE	OUTLET FORCEPS	LOW FORCEPS	TOTAL
ALIVE	32	19	52	103
STILBORN	1	1	5	7
APGAR <6	1	1	1	3
APGAR >6	31	18	51	100

Table 6: Neonatal outcome

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<b>MATERNAL COMPLICATIONS</b>	<b>VENTOUSE</b>	<b>OUTLET FORCEPS</b>	<b>LOW FORCEPS</b>	<b>TOTAL</b>
PPH	3	0	6	9
EPISIOTOMY EXTENSION	6	2	10	18
CERVICAL TEAR	0	1	3	4
CATHERIZATION	0	0	3	3
	<b>9</b>	<b>3</b>	<b>21</b>	<b>34</b>

Table 7: Complication-maternal

<b>NEONATAL COMPLICATIONS</b>	<b>VENTOUSE</b>	<b>OUTLET FORCEPS</b>	<b>LOW FORCEPS</b>	<b>TOTAL</b>
NICU ADIMMISSION	3	1	4	8
FORCEPS MARK	0	0	2	2
ICH	0	0	1	1
<b>TOTAL</b>	<b>3</b>	<b>1</b>	<b>7</b>	<b>11</b>

Table 8: Complication-fetal

<b>HOSPITAL STAY</b>	<b>VENTOUSE</b>	<b>OUTLET FORCEPS</b>	<b>LOW FORCEPS</b>
NUMBER	33	20	57
MEAN	3.9	4.6	5.0
STANDARD DEVIATION	1.3	1.1	1.8

Table 9: Hospital stay distribution

### DISCUSSION:

- In the study, 21 to 30years women required more instrumentation (54.5%) (Table 1).
- Primigravida required more assistance over multigravida (78.2% vs 21.8%) (Table 2).
- 60 women required instrumental delivery between 37-40 weeks of gestation (Table-3).
- There were 94 neonates with mean birth weight of 3 kg as shown by (Table 4).
- Commonest indication for instrumental delivery being fetal distress (55.5%), followed by prolonged second stage with failed maternal forces (32.7%) (Table 5).
- In our study, neonatal outcome there were 7 perinatal mortality.103 babies were alive 3 neonates had APGAR score <6 while 100 babies had APGAR score>6, (Table 6).
- 18 women had episiotomy extension.9 atonic PPH, 8 women required blood transfusion. 3 required catherization for more than 24hrs. (Table7).
- All babies delivered by instrument were sent to NICU for observation, amongst this 8 neonates were admitted in NICU, 1 had forceps mark, 1 baby had intracranial hemorrhage (Table 8).
- Women with low forceps delivery required prolonged hospitalization (Table 9).

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In our study the mean age, gestational age, birth weight is comparable to Shekar shashank<sup>6</sup> et al study conducted in the year 2012. Commonest indication for instrumentation being fetal distress followed by prolonged second stage. Commonest maternal complication being episiotomy extension as shown in table A.

PARAMETER	PRESENT STUDY	PRESENT STUDY	SHEKHAR SHASHANK ET AL	SHEKHAR SHASHANK ET AL
	VENTOUSE	FORCEPS	VENTOUSE	FORCEPS
AGE (years), mean	22.2	24.1	25.2	24.4
Gestational age (weeks)	38.5	39	39	38.6
Birth weight (kg)	3	3.1	2.9	2.8
FETAL DISTRESS	19	42	37	31
DELAYED 2 <sup>ND</sup> STAGE	5	31	7	8
CUT SHORT 2 <sup>ND</sup> STAGE	9	4	4	6
EPISIOTOMY EXTENSION	6	12	9	23
CERVICAL TEAR	-	4	2	2

TABLE A

Table B, shows comparison between our study and Singh<sup>7</sup> et al study, conducted in year 2011. This table also highlights the fact that commonest indication is fetal distress and episiotomy extension common complication. 8 Vs 4 Blood transfusion and NICU admission remain the same.

PARAMETER	PRESENT STUDY	PRESENT STUDY	SINGH ET AL	SINGH ET AL
	VENTOUSE	FORCEPS	VENTOUSE	FORCEPS
PROLONGED 2 <sup>ND</sup> STAGE WITH FAILED MATERNAL FORCES	5	31	17	10
FETAL DISTRESS	19	42	5	21
CUT SHORT 2 <sup>ND</sup> STAGE	9	4	38	29
PPH	3	6	0	2
EPISIOTOMY EXTENSION	6	12	8	24
CERVICAL TEAR	0	4	0	8
BLOOD TRANSFUSION	1	7	0	4
DURATION OF STAY	4DAYS	5DAYS	24 HOURS	36 HOURS
NICU admission	3	5	4	4
FORCEPS MARK	-	2	6	23
ICH	-	1	-	-

TABLE B

**SUMMARY:** Of total 3385 deliveries, 110 cases required instrumental vaginal delivery (3.6%). Primegravida required more assistance over multigravida. Most common indication was fetal distress. Common maternal complication was episiotomy extensions. There were eight neonatal admission to NICU (neonatal intensive care unit).

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**CONCLUSION:** Ventouse and forceps remains appropriate tool in the armamentarium of the modern obstetrician. The major factor which determines the safety of the instrument is the proper assessment and application of the instrument. Extreme caution, proper expertise and judicial use of these instruments are required to prevent undue risk of mother and fetus. Encouraging operative vaginal deliveries may help to reduce raised caesarean section rates.<sup>7,8</sup> The skill of application of forceps has to be taught to the residents. There should be training programme/workshops to update the skill.

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